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AGRICULTURAL MEMORANDUM No. 397

Heavy rains and field drainage 3. EAST

L P Smith

The following stations were examined:-

31	Shoeburyness (516 mm)	33	Gorleston (607 mm)
32	Cambridge (551 mm)	34	Sprowston (645 mm)
21	Cranwell (597 mm)	35	Sandringham (691 mm)

As stated previously, Cranwell results suggested that low rainfall areas in Lincolnshire, including all Holland, were probably akin to stations in eastern England (counties from Huntingdon eastwards). The analysis now suggested that the Gorleston sample was inconsistently high during the 1951-1960 period, and that Shoeburyness in south Essex behaved more like stations in southeast England.

The data are given in:

Table 3A	Total occasions in 10 years
Table 3B	Occasions in 10 years when soil was below capacity
Table 3C	Occasions in 10 years when soil was at capacity

The low values in Table 3C are due to two factors: the area is one of low rainfall and it is at capacity for only a short period of months.

Smoothing, with a short and limited sample, was difficult. The most sensible interpolations with soil at capacity are given in:-

Table 3D	Occasions in 10 years 50 mm or more 1-8 days 500-700 mm
Table 3E	Occasions in 10 years 75 mm or more 1-8 days 500-700 mm
Table 3F	No occasions of 100 mm or more are thought likely in a 10 year sample
Table 3G	Occasions in 10 years in individual categories of days and rainfall

Any comments or suggestions on this paper should be referred to the author.

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TABLE 3A Total occasions in 10 years (a) 50–75 mm (b) 75–100 mm

	Site	Annual Average		Period of Days 1	2	3	4	5	6	7	8 days or less
31.	Shoeburyness (Essex)	516	(a)	1	2	2	3	11	21	34	48
			(b)	0	0	1	2	3	4	7	12
			TOTAL	1	2	3	5	14	25	41	60
32.	Cambridge	551	(a)	1	2	2	3	6	12	20	34
			(b)	0	0	1	2	3	4	5	6
			TOTAL	1	2	3	5	9	16	25	40
21.	Cranwell (Lincs)	597	(a)	1	3	6	10	17	35	50	68
			(b)	0	0	0	0	0	1	3	5
			TOTAL	1	3	6	10	17	36	53	73
33.	Gorleston (Norfolk)	607	(a)	0	1	4	9	18	35	59	92
			(b)	0	0	0	0	0	0	0	0
			TOTAL	0	1	4	9	18	35	59	92
34.	Sprowston (Norfolk)	645	(a)	0	2	3	4	7	14	28	54
			(b)	0	0	1	2	3	4	5	6
			TOTAL	0	2	4	6	10	18	33	60
35.	Sandringham (Norfolk)	691	(a)	0	0	0	1	2	9	23	41
			(b)	0	0	0	0	0	0	0	0
			TOTAL	0	0	0	1	2	9	23	41

None of the stations in this area experienced rainfalls of 100 mm or more in the periods stated

TABLE 3B Soil below Capacity (a) 50-75 mm (b) 75-100mm

Site	Annual Average		Period of Days 1	2	3	4	5	6	7	8 days or less
Shoeburyness	516	(a)	1	2	2	2	6	15	26	38
		(b)	0	0	1	2	3	4	6	8
		TOTAL	1	2	3	4	9	19	32	46
Cambridge	551	(a)	1	2	2	3	6	12	18	29
		(b)	0	0	1	2	3	4	5	6
		TOTAL	1	2	3	5	9	16	23	35
Cranwell	597	(a)	1	3	6	10	17	32	44	57
		(b)	0	0	0	0	0	1	3	5
		TOTAL	1	3	6	10	17	33	47	62
Gorleston	607	(a)	0	1	4	8	16	28	42	60
		(b)	0	0	0	0	0	0	0	0
		TOTAL	0	1	4	8	16	28	42	60
Sprowston	645	(a)	0	2	3	4	7	13	22	37
		(b)	0	0	1	2	3	4	5	6
		TOTAL	0	2	4	6	10	17	27	43
Sandringham	691	(a)	0	0	0	1	2	5	12	18
		(b)	0	0	0	0	0	0	0	0
		TOTAL	0	0	0	1	2	5	12	18

TABLE 3C Soil at Capacity (a) 50-75 mm (b) 75-100 mm

Site	Annual Average		Period of Days 1	2	3	4	5	6	7	8 days or less
Shoeburyness	516	(a)	0	0	0	1	5	6	8	10
		(b)	0	0	0	0	0	0	1	4
		TOTAL	0	0	0	1	5	6	8	14
Cambridge	551	(a)	0	0	0	0	0	0	2	5
		(b)	0	0	0	0	0	0	0	0
		TOTAL	0	0	0	0	0	0	2	5
Cranwell	597	(a)	0	0	0	0	0	3	6	11
		(b)	0	0	0	0	0	0	0	0
		TOTAL	0	0	0	0	0	3	6	11
Gorleston	607	(a)	0	0	0	1	2	7	17	32
		(b)	0	0	0	0	0	0	0	0
		TOTAL	0	0	0	1	2	7	17	32
Sprowston	645	(a)	0	0	0	0	0	1	6	17
		(b)	0	0	0	0	0	0	0	0
		TOTAL	0	0	0	0	0	1	6	17
Sandringham	691	(a)	0	0	0	0	0	4	11	23
		(b)	0	0	0	0	0	0	0	0
		TOTAL	0	0	0	0	0	4	11	23

TABLE 3D EAST 50 mm or more Occasions in 10 years Soil at Capacity

Annual Average	1	2	3	4	5	6	7	8 days or less
500	0	0	0	0	0	0	1	7
550	0	0	0	0	0	0	3	10
600	0	0	0	0	0	1	6	14
650	0	0	0	0	1	3	9	19
700	0	0	0	0	1	5	12	24

TABLE 3E EAST 75 mm or more Occasions in 10 years Soil at Capacity

Annual Average	1	2	3	4	5	6	7	8 days or less
500	0	0	0	0	0	0	0	1
550	0	0	0	0	0	0	0	1
600	0	0	0	0	0	0	0	1
650	0	0	0	0	0	0	1	2
700	0	0	0	0	0	0	1	2

TABLE 3F No occasions of 100 mm or more

TABLE 3G EAST Occasions in 10 years Soil at Capacity (a) 50-75 mm (b) Over 75 mm

Annual Average		1	2	3	4	5	6	7	8	days but not less
500	(a)	0	0	0	0	0	0	1	5	
	(b)	0	0	0	0	0	0	0	1	
	TOTAL	0	0	0	0	0	0	1	6	7
550	(a)	0	0	0	0	0	0	3	6	
	(b)	0	0	0	0	0	0	0	1	
	TOTAL	0	0	0	0	0	0	3	7	10
600	(a)	0	0	0	0	0	1	5	7	
	(b)	0	0	0	0	0	0	0	1	
	TOTAL	0	0	0	0	0	1	5	8	14
650	(a)	0	0	0	0	1	2	5	9	
	(b)	0	0	0	0	0	0	1	1	
	TOTAL	0	0	0	0	1	2	6	10	19
700	(a)	0	0	0	0	1	4	6	11	
	(b)	0	0	0	0	0	0	1	1	
	TOTAL	0	0	0	0	1	4	7	12	24